

# Molecular BioSystems

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## IN THIS ISSUE

ISSN 1742-206X CODEN MBOIBW 3(10) 637-736 (2007)



### Cover

See Isacoff *et al.*, pp. 686–704. Optical switches and triggers for the manipulation of ion channels and pores. Image reproduced by permission of Pau Gorostiza and Ehud Isacoff from *Mol. BioSyst.*, 2007, 3, 686.

## CHEMICAL BIOLOGY

B73

Drawing together research highlights and news from all RSC publications, *Chemical Biology* provides a 'snapshot' of the latest developments in chemical biology, showcasing newsworthy articles and significant scientific advances.

## Chemical Biology

October 2007/Volume 2/Issue 10

[www.rsc.org/chembiology](http://www.rsc.org/chembiology)

## EDITORIAL

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### Understanding and Manipulating Channels and Pores

Welcome to the Understanding and Manipulating Channels and Pores special issue of *Molecular BioSystems*. In this Editorial, Hagan Bayley introduces and highlights the papers in this issue.



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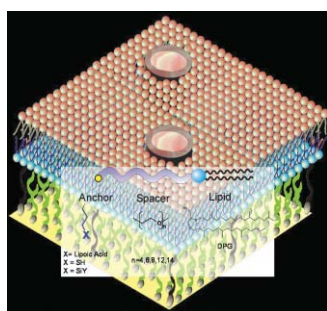
# HOT OFF THE PRESS

## Hot off the Press

Hot off the Press highlights recently published work for the benefit of our readers. Our contributors this month have focused on the RNA world and gene regulation. New contributors are always welcome. If you are interested please contact [molbiosyst@rsc.org](mailto:molbiosyst@rsc.org) for more information, we'd like to hear from you.

## HIGHLIGHTS

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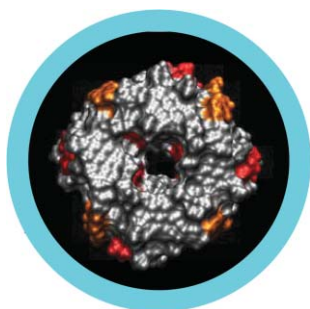


### Insulating tethered bilayer lipid membranes to study membrane proteins

Ingo Köper

Modular tethered bilayer lipid membranes as a model platform to study membrane–protein interactions

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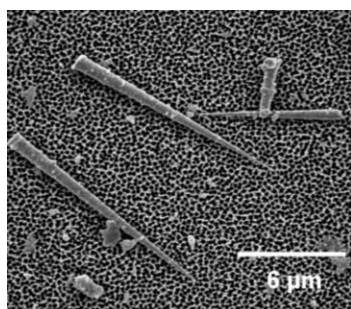
### Ion channels and pores, made from scratch

Naomi Sakai, Jiri Mareda and Stefan Matile\*

Highlights in the field of synthetic ion channels and pores are summarized with emphasis on the structural diversity accessible with synthetic organic chemistry and the importance of advanced nanoarchitecture to create significant function.

## REVIEW

667



### Developing synthetic conical nanopores for biosensing applications

Lindsay T. Sexton, Lloyd P. Horne and Charles R. Martin\*

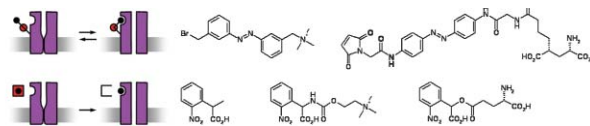
In this review we bring together recent results from our group focused towards the development of biosensors from single conically-shaped artificial nanopores. Three prototype conical nanopore sensors are described.

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### Optical switches and triggers for the manipulation of ion channels and pores

Pau Gorostiza and Ehud Isacoff\*

This review covers the great progress in the development of optical switches and triggers over the last decades, with special emphasis on the remote control of ion channels and pores.

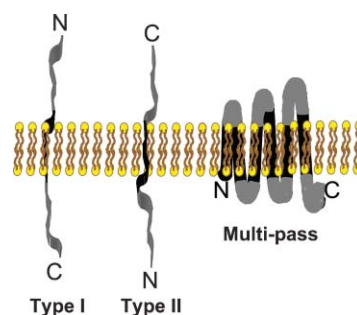


705

### Proteins at membrane surfaces—a review of approaches

Bruce A. Macher\* and Ten-Yang Yen

Membrane proteins are critical for normal cellular differentiation and function, and alterations in these proteins often leads to cell dysfunction and disease. This brief review presents a summary of the literature related to membrane proteomics with an emphasis on efforts to develop effective protocols for the enrichment of membrane proteins, particularly those located in the plasma membrane.



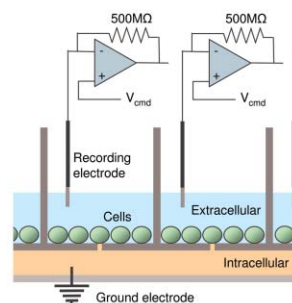
## PAPER

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### Population patch clamp electrophysiology: a breakthrough technology for ion channel screening

Tim J. Dale, Claire Townsend, Emma C. Hollands and Derek J. Trezise\*

Patch clamp recordings from populations of cells opens up new opportunities for ion channel drug discovery.



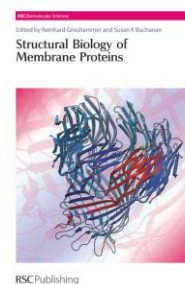
## BOOK CHAPTER

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### Expression of Recombinant G-Protein Coupled Receptors for Structural Biology

Filippo Mancia and Wayne A. Hendrickson

A chapter from *Structural Biology of Membrane Proteins* from the RSC Biomolecular Sciences series. The RSC Biomolecular Sciences series refers to areas of structural biology, chemical biology, informatics, drug discovery and development, and biophysical chemistry. For more information please go to [www.rsc.org/books](http://www.rsc.org/books).



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